

## LIGATION OF THE EXTERNAL CAROTID ARTERY.<sup>1</sup>

A SYNOPSIS OF FIVE SUCCESSFUL CASES.

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PRIOR to 1878 there were recorded only 67 cases in which the external carotid artery alone was tied; 3 of these died, and these fatal cases were from gunshot wounds in military practice. One died on the table from the effect of hæmorrhage before ligature could be applied. In the other two the cause of death is not given. Of the 67 cases hæmorrhage after deligation occurred in 5, none of which proved fatal. In 4 of these the bleeding was noted as at the seat of lesion beyond the ligature, and in 1 the point where the hæmorrhage occurred is not stated. The artery was tied on both sides in 2 patients, and all recovered.

Since the demonstration by myself in 1878 of the comparative regularity of origin of the branches of this vessel together with the great mortality following deligation of the common carotid, as shown by an analysis of seven hundred and ninety-four cases, the application of the ligature to the common trunk for a lesion in the distribution of the external carotid, beyond the origin of the lingual branch, has been abandoned, and deligation of the external trunk has become the accepted operation.

The introduction of the catgut ligature has added an element of safety to this operation which has, in my opinion, almost entirely removed the danger of secondary hæmorrhage. Without further discussion of its merits, I wish to add to the record the following cases:

<sup>1</sup>Read before the New York Surgical Society, February 23, 1887.

CASE I.—M. M., a carpenter, æt. 56, married, American, came under my care through the courtesy of Dr. Boyley, of this state, on January 6, 1885. The patient's history contained nothing of interest, with the exception that he had been a constant chewer of tobacco until one year before, when he stopped on account of a painful sore which appeared on the left buccal wall, at the point where he was in the habit of holding the tobacco as it was being saturated with saliva. The ulcer and induration gradually spread, and when I first saw him there was an evident epithelioma involving the buccal wall and a limited portion of the alveolus of the lower jaw. The lymphatic glands of the left upper carotid and submaxillary triangles were enlarged and indurated. On January 9, under ether narcosis, I dissected out the glands, and, partly in order to prevent bleeding, but chiefly to retard the recurrence and further development of the neoplasm, placed a catgut ligature around the left external carotid artery below the lingual and about a third of an inch above the bifurcation. As is my rule of practice, I also tied the superior thyroid artery about a quarter of an inch beyond its origin. Antiseptic dressing, a bone drain, and silk sutures were used. I then excised the epithelioma, cutting well away from the margin of the disease. The patient recovered without hæmorrhage or any unfavorable symptoms, and on the 31st, twenty-nine days after the operation, he left the city for his home.

CASE II.—P. H. W., American, æt. 37, a journalist, married, came to me, through the kindness of the late Professor Frank H. Hamiltmn, on June 26, 1886. He had for years been a confirmed smoker of cigars and cigarettes, and, fifteen months before I saw him, a painful ulcer had appeared on the lower surface of the left side of the tongue near the tip, just where the end of the cigar rested while he held it between his teeth and lips. When I examined him the anterior portion of the tongue was indurated and swollen in part and in part occupied by the characteristic ulcer of epithelioma. The posterior limit of the induration crossed the tongue obliquely, being about an inch from the tip on the right side and two inches along the left border. The glands of the left side of the neck were infiltrated. On the 29th, the patient being anæsthetized with ether, I dissected out the glands of the neck (left side) and tied the external carotid a quarter of an inch above the bifurcation of the primitive trunk. The superior thyroid was also tied. Catgut ligatures were employed, also a bone drain and catgut sutures. I then extirpated the tongue and floor of the mouth. The organ was divided an inch behind the line of induration. The patient recovered without a bad symptom and is now (eight months after the operation) free from all evidence of epithelioma and in active business.

CASES III and IV.—Z. M., æt. 47, housewife, a native of Italy, came under observation June 14, 1886, having been sent to my clinic at the polyclinic by the kindness of Dr. Abruzzo, of this city. Sixteen months before this date, following the cessation of her menstrual flow,

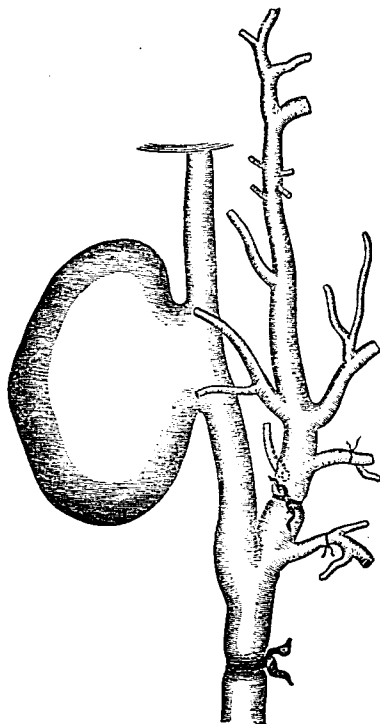


FIG. 1. SHOWING LOCATION OF THE LIGATURES APPLIED IN CASE V.

she noticed that the parotid gland of each side was enlarged. The swelling of these organs continued, the mouth became dry from lack of saliva, and deglutition was difficult. Up to the time of the appearance of the tumors of the parotid the heat of the patient had been geo

On her admission into Mt. Sinai Hospital, the tumors were of about equal size, extending from the upper level of the ear to the level of the chin. A diagnosis of bilateral sarcoma was made. The patient was told that an operation would very probably not effect a cure, and that facial paralysis would result. She insisted upon an attempt to give her even temporary relief. On June 14 I tied the right external carotid, between the lingual and the bifurcation of the primitive trunk, preliminary to the removal of the neoplasm. The superior thyroid was then tied. The hæmorrhage during the dissection was insignificant. The wound healed quickly, and on September 21 the second operation was performed. On account of the extension of the tumor down the neck, I had great difficulty in getting at the external carotid, which was entirely overlapped by the new growth and was pressed deep into the neck. The bleeding was so troublesome that I threw a temporary loop of catgut around the common trunk, an inch below the bifurcation, which controlled the hæmorrhage until I passed the ligature around the external trunk. After removing the neoplasm, I found the ligature had been applied on a level with the crotch of bifurcation. This was nearer the primitive trunk than I had intended, but when it was applied I could not see the exact location of the ligature on account of the tumor. It was left in this position, and the superior thyroid was also secured. No bleeding occurred, and the patient recovered and left the hospital on March 9. This is probably the only case on record in which the ligature was applied so low, and it well demonstrates the safety and efficiency of the catgut. The microscopical examination of one of the neoplasms proved it to be a round-cell sarcoma.

CASE V.—In this case the common and external carotid artery and the superior thyroid branch were tied for aneurism of the internal carotid, (See Fig. 1). The internal trunk was affected with atheroma to such an extent that the ligature could not be applied to this vessel. The operation was done on July 24, 1883. The tumor rapidly diminished in size, the patient leaving the hospital on the twenty-third day after the operation. She is now living and well.